

hit upon its pores, and the red upon its parts. Lastly, were the rays of Light reflected by impinging on the solid parts of Bodies, their reflexions from polished Bodies could not be so regular as they are. For in polishing Glass with Sand, Putty or Tripoly, it is not to be imagined that those substances can by grating and fretting the Glass bring all its least particles to an accurate polish; so that all their surfaces shall be truly plain or truly spherical, and look all the same way, so as together to compose one even surface. The smaller the particles of those substances are, the smaller will be the scratches by which they continually fret and wear away the Glass until it be polished, but be they never so small they can wear away the Glass no otherwise than by grating and scratching it, and breaking the protuberances, and therefore polish it no otherwise than by bringing its roughness to a very fine Grain, so that the scratches and frettings of the surface become too small to be visible. And therefore if Light were reflected by impinging upon the solid parts of the Glass, it would be scattered as much by the most polished Glass as by the roughest. So then it remains a Problem, how Glass polished by fretting substances can reflect Light so regularly as it does. And this Problem is scarce otherwise to be solved than by saying, that the reflexion of a ray is effected, not by a single point of the reflecting Body, but by some power of the Body which is evenly diffused all over its surface, and by which it acts upon the ray without immediate contact. For that the parts of Bodies do act upon Light at a distance shall be shewn hereafter.

Now

Now if Light be reflected not by impinging on the solid parts of Bodies, but by some other principle; its probable that as many of its rays as impinge on the solid parts of Bodies are not reflected but stifled and lost in the Bodies. For otherwise we must allow two sorts of reflexions. Should all the rays be reflected which impinge on the internal parts of clear Water or Crystal, those substances would rather have a cloudy Colour than a clear transparency. To make Bodies look black, its necessary that many rays be stopt, retained and lost in them, and it seems not probable that any rays can be stopt and stifled in them which do not impinge on their parts.

And hence we may understand that Bodies are much more rare and porous than is commonly believed. Water is 19 times lighter, and by consequence 19 times rarer than Gold, and Gold is so rare as very readily and without the least opposition to transmit the magnetick Effluvia, and easily to admit Quick-silver into its pores, and to let Water pass through it. For a concave Sphere of Gold filled with Water, and sodered up, has upon pressing the Sphere with great force, let the Water squeeze through it, and stand all over its outside in multitudes of small Drops, like dew, without bursting or cracking the Body of the Gold as I have been informed by an Eye-witness. From all which we may conclude, that Gold has more pores than solid parts, and by consequence that Water has above forty-times more pores than parts. And he that shall find out an Hypothesis, by which Water may be so rare, and yet not be capable of compression by force, may doubtless by the same Hypothesis make Gold and Water, and all other